DOCUMENT RESUME

ED 166 920 EC 113 837

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TITLE The Causes, Diagnosis, and Treatment of Academic Underachievement--Research of the Recent Literature.
PUB DATE [77]
NOTE 24p.; For related information, see EC 113 838-839 ; Not available in hard copy due to print quality

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Educational Diagnosis; *Etiology; *Identification; *Intervention; Observation; *Teaching Methods; *Underachievers

ABSTRACT

The first of three papers on underachievement in children focuses on causes, identification and treatment. Research is reviewed concerning 11 factors (including low self esteem, socioeconomic influences, and teachers' expectations) in underachievement. Identification and diagnosis through observation and self observation are examined. Seven treatment aspects (including drugs, behavioral approaches, information feedback, and motivational strategies) are considered. (CL)

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THE CAUSES DIAGNOSIS AND TREATMENT OF ACADEMIC UNDERACHIEVEMENT -

- RESEARCH OF THE RECENT LITERATURE

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THE CAUSES DIAGNOSIS AND TREATMENT OF ACADEMIC UNDERACHIEVEMENT-

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A INTRODUCTION

The research of Keister and UpdeGraff (1937) about forty years ago, was one of the first studies which suggested that the effect of failure on children, was frustration. It also suggested a vicious cycle of further under-achievement following, unless effective steps were taken to counteract this tendency. It was carried out at a time when behaviour and modification was still an unusual approach, especially as applied to the problem of achievement. The content of this paper will discuss briefly recent research into academic underachievement in children.

The paper will be divided into the causes of underachievement, the identification and diagnosis of underachievement and the treatment of under-achievement.

As with any concept, the problem of underachievement begins with certain premises which are not necessarily accepted by everyone. One of the premises is that I.Q., differentiates ability between individuals and that intellectual assessment through individually administered tests are if imperfect, at present the most objective form of assessing intellectual ability - this being later contrasted with intellectual achievement.

Using I.Q., as the criteria for intellectual ability, is not accepted by everyone. Gordon (1976), investigated the relationship between children's I.Q. and scholastic achievement scores and race, occupational attainment, and social mobility of their parents. The I.Q., and achievement test scores of 1,102 Chicago area 5th and 6th graders, Black and White, middle and working-class, were aggregated into seven cohorts of approximately equal I.Q. scores. Within these cohorts, differences in achievement emerged which could not be attributed to race or class-linked intellectual discrepancies. Among subjects with average I.Q. scores (92-104.9), Whites scored higher in achievement than Blacks of the same sex and socioeconomic status, and middle-class children had a similar advantage over working-class children of the same race and sex. Consistently, "overachievement" and "underachievement" among children with similar I.Q. scores were related to race and class situations.

The whole concept of achievement has been attacked from time to time and other values have been substituted for it. There is currently some reaction to this. Lückert (1975), discusses the necessity to achieve and to repress emotions in modern society. Strong arguments are presented against the trend to replace achievement by other values in schools and society.

Let us now turn to some of the recent research carried on in the areas of etiology and underachievement.

I

The Causes of Underachievement.

Research into the causes of underachievement may be divided in various ways. The present approach has been to divide such research into that which concerns itself with the following:

(1) Low self esteem, the lack of confidence and purpose, etc.
(2) Research into the importance of success, leading to further success.
(3) The teacher variable and achievement.
(4) Personality traits and how these affect achievement.
(5) Special skills required for achievement, i.e., Reading.
(6) The importance of physical factors, such as, malnutrition.
(7) The importance of financial considerations and capital expenditure.
(8) Parental factors, i.e., their presence or absence.
(9) Socioeconomic factors.
(10) Teachers' expectations.
(11) Birth order, size of family, etc.

Because of underachievement due to low self-esteem, low confidence, lack of purpose and poor self-concept.

There has been a relatively large amount of research carried out in the above area in recent years.

Brookover, W. B. and Schneider, J. M. (1975) report a study of social and social-psychological variables in an effort to identify factors to explain differences in level of achievement amongst schools with similar socioeconomic status (S.E.S.) and racial composition. The most important climate of variable was students' reported sense of futility; other contributable variables were higher teacher reported need to push individual students and higher student perceived present evaluation expectations.

Burbach, H. J. and Bridgeman, B. (1976) examined the relationship between self-esteem and intellectual achievement. A sample of 274 5th graders were subdivided by sex and race, and a low positive relationship between these two scales persisted across all groups. When the total intellectual score was separated into its intellectual success and intellectual failure and components and correlated with Cooper Smith's self-esteem inventory (C.S.E.I.), it was discovered that for females and Black males, self-esteem was significantly related to taking personal

credit for academic success. High self-esteem among White males was significantly related to accepting blame for academic failure.

A study carried out in India, by Srivastava (1976) had similar results. He administered an academic motivation inventory with two parts, self-concept of academic ability (Sc) and importance attached to academic achievement (IA) to under, over, high and low achievers (UA, OA, HA, and LA) with 150 14-16 year old Indian 10th and 11th grade males in each group.

Further work was done by Stenner, Katzenmeyer (1976) to test ability tests (verbal and non verbal). 6 achievement tests and 7 scales of self-observation scales (SOS), a measure of self-concept, were completed by 225 6th graders in 2 West Virginia rural counties. Self-concept, (measured by the SOS) were shown to add significantly to the prediction equation for achievement over and above the contribution of non verbal intelligence. The SOS accounted for 22 per cent of the variance in reading achievement and combined with non verbal intelligence to account for 34 per cent of the variance in reading achievement.

Chang (1976), in another study, studied 198, 4th to 6th grade children to determine the relationship between children's self-concept, (using the Piers-Harris Children's Self-concept Scale), academic achievement and teacher's rating (using an author developed 18 bi-polar adjective check-list of the children's self-concept.

The differences between grade levels, sex, and ethnic group membership, were tested by analysis of variance. Significant correlations were found between teachers' rating of child's self-concept and child's academic achievement. Significant ethnic group differences were found in self-concept in this study, with interethnic groups showing the higher scores.

Youngblood (1976), in an interesting study of Filipino High School students found that non intellectual variables such as self-esteem, are crucial to the academic achievement process and should continue to receive attention of the educator as they seek to improve scholastic performance. Of the 3 independent variables, self-concept emerges as the best indicator of high school achievement.

Vollmer and Kaufmann (1975) used the term "self-esteem" in place of self-concept. They suggest that problem solving may be differentially related to achievement motivation in high and low ability groups. They found that subjects with high self-confidence might attempt to avoid failure by trying hard to succeed, or the more probable strategy for subjects with low expectancy, would be to exert a little effort.

Other studies have studied high expectation, or low purpose in life and family background, associated with achievement.

Leviton and Kiraly (1975), studied the relationship between academic achievement and self-concept in 64, 1st, 2nd and 3rd graders in special education classes for the Learning Disabled. Measures of reading, vocabulary and comprehension and arithmetic problem solving were obtained from the Metropolitan Achievement Test, and self-concept was measured by the instructional objective

exchange, self-concept, self-appraisal inventory. Here it was found essentially that high expectation in E.S.N. or lower intelligence type children leads to underachievement.

Low purpose in life, drug addiction and underachievement have also been noted to be related. Padelford (1974) administered to 416 High School students a purpose of life (PIL) test, a drug involvement survey and a general questionnaire, providing information concerning sex of subject, ethnic group and father image. Analysis of these data established the existence of a relationship between the extent of students' drug involvement and their PIL. A significant negative relationship appeared between drug involvement and PIL for the total group studied, for males as a group and for all Anglo-Americans' subjects.

Drug involvement was significantly greater among subjects with low purpose in life test results than among those with high purpose in life results. Purpose in life was significantly higher among subjects having a strong father image than among those having a weak father image, among females than among males and among Anglo-Americans than among subjects of Mexican American descent.
The only recent study concerning family background and in particular, the affect of parental divorce, was carried out by Wallerstein and Kelly (1976). They discussed the impact of divorce on 31, 9-10 year old children, as observed shortly after the initial parental separation, and one year later. Data was obtained as part of an on-going clinical study, begun in 1970, of 131 children and adolescents, from 60 divorcing families in California. The children's initial emotional response to the divorce, (e.g., anger, denial, layering of feelings and attempted mastery of the situation by activity and play) and its effects on school performance, are described with examples. At the one-year follow-up, most of the responses had become muted, although 14 of the 29 children evaluated follow-up gave evidence of troubled and conflicted depressive behaviour patterns, especially involving low self-esteem which undoubtedly affected achievement.

II

Success Breeding Success

Only two studies have actually appeared recently which concerned themselves with the effect of success or achievement, leading to further achievement.

Fry, (1976) investigated the effects of success and failure experiences on subsequent self ratings of positive and negative social psychological characteristics. Subjects who experienced success, made significantly greater gains in positive self-assessments, and failure subjects made significantly greater gains in negative self-assessments.

Revelle and Michaels, (1976) suggest that task difficulty is an important

factor in level of achievement. It is shown that the inertial-tendency postulate implies an asymmetric, curvilinear relationship between task difficulty and effort, and that / the degree of symmetry is a function of the number of experimental trials and the consummatury value of failure.

III

The Teacher Variable

The teacher variable has been studied in addition to this, the classroom climate and the contrasting of traditional and progressive methods and how this affects achievement among pupils. Stroud (1973) argues that although teacher variability may account for an important amount of the variance in school achievement, the community quality factor may be equally or more important. O'Reilly (1975), tended to show that the psychological climate of a classroom has an effect on the learning of students. Results lead to the following conclusions:

(a) classroom climate is a significant factor in pupil achievement,
(b) although pupil personal and social characteristics are important correlates of achievement, climate in some instances is a more important factor,
(c) although imput, process, and output are all inter-correlated, process variables have an independent effect on achievement,
(d) education includes psycho-social factors, as well as academic factors and the two are related.

Two recent studies have contrasted traditional and progressive methods of teaching and the result is similar. Massey, Scott and Dornbusch (1975) argue that teachers display overt racism in American public schools and these have been replaced by an atmosphere of "warm acceptance". This "acceptance" however, has not been accompanied by challenging academic programmes, thus creating a debilitating environment for the Black student.

Sherman, Brophy, Evertson and Crawford (1976) attempted to assess whether the consistent teacher differed in any way from the teacher in the comparison group; the teachers in each group were administered a 495 item questionnaire. Consistent teachers were more traditional in their attitudes and beliefs, than teachers in the comparison group and this difference, although not related to teachers' age, or years of experience, was related to the achievement of the children.

IV

Personality Traits Affecting Underachievement

Recent research has considered three areas of personality of particular importance to achievement. This includes introversion/extroversion, interest and perseverance and anxiety. Orpen (1976) examined the "age effect" hypothesis from British and American studies, that academic success at primary school is linked to stable extraversion, while success at university, is associated with introversion with 170 Black and White school-children (aged 14) and 150 Black and White university students (aged 20), brought up in non Western and Western cultures, respectively. The extraversion and neuroticism scores are the subjects on the Junior Eysenck Personality Inventory or the Eysenck Personality Inventory were compared to the academic success, given by their performance in school or university examinations. Results support the "age effect" hypothesis in both White and Black groups.

Interest and perseverance were studied by Fullerton and Britton (1976). They studied characteristics of persisting and non-persisting vocationally undecided male college students. Demographic, academic, health and psychological factors previously found to differentiate persisting (subjects completing first term/junior year, of on or ahead of schedule) and non-persisting college students were examined for 315 males who responded "undecided" or did not respond to a vocational choice item on a personal information form completed upon entree to a large State University. Investigation focused on the identification of differences between groups and items which separate and predict group membership. Although complexity inter-related, two themes emerged which characterised the persisting groups:

(a) a stronger motivation to a college degree and

(b) a stronger academic interest and better performance.

The final study was that of Schwarzer (1975) who administered to 1,369 4th graders a German version of the Test Anxiety Scale for Children. When subjects were classified into 5 groups by social class (as indicated by the father's occupation), anxiety rose consistently for boys and even more for girls, with lower social class. Lower grades in German and Mathematics were significantly associated with great anxiety, especially for girls.

V

Special Skills of Reading Associated with Achievement

Inability to read has long been known to affect achievement in children. Only one study is presented to illustrate this. Kirk and Elkins (1975) presented results of a study of more than 3,000 children enrolled in 21 child service demonstration centres for learning disabilities indicate that these children

were generally below grade in educational achievement, especially in Reading.

VI

Physical Factors and Achievement

Physical factors undoubtedly affect academic achievement. This is especially the case for malnutrition. Wunderlich (1975) presents a case report of a 10-year old girl with learning problems, due to severe allergies. The case is used to illustrate the problems of a chronically ill child as she strives to adapt to the demands of school and society. The effects of biological and social factors on academic achievement were also examined.

A study of the effect of nutrition was carried out by Winick, Meyer and Harris (1975). They examined the current status of 141 female Korean orphans who were adopted during early life (less than 3 years old) by U.S. parents and who had thereby undergone a total change in environment. Subjects were divided into three groups on the basis of how their height and weight at the time of admission to the Korean Adoption Service related to a reference standard of normal Korean children of the same age: malnourished (Group 1), moderately nourished (Group 2), and well nourished or control (Group 3). Information on health, growth, nutrition and family socioeconomic background were obtained from subject's families by a check-list questionnaire and I.Q. and school performance data were obtained from schools. Results show that all three groups have surpassed the expected mean for Korean children in both height and weight and all the groups have reached or exceeded mean I.Q. values for American children. Results for school achievement are similar to those for I.Q's, although there was a significant difference between subjects in Group 1 and 3. Data suggests that if a severely malnourished child is subsequently to develop adequately, any programme of environmental enrichment must be of long duration.

VII

The Effect and Achievement of Per Capital Expenditure

Administrators and teachers are frequently concerned with the amount of money available to deal with educational requirements. Certainly the two peices of research about to be mentioned show that per capita expenditure did not have a significant effect on school achievement at any level (Osborne 1975). The same was found by Kurth and Pavalko (1975). They examined the nature of the relationship between educational resources, socioeconomic and racial characteristics, and student academic performance in Florida using data from all 67 public school districts and correlation co-efficients. Results indicate that

differences in the resources of an educational programme do not have a significant effect on students' academic performance.

VIII

Parental Absence

The question of parental absence or presence has been of some concern to educators and parents also. Marino and McCowan (1976) reviewed the literature on this subject and suggest that various types of absenteeism affect children differently. The dynamics of the one-parent home are explored with reference to variable effects on sex role development, academic achievement, intellectual development, and delinquency. Although the research in this area is extensive, methodological problems were found to be numerous and to severely limit the conclusions which can be drawn regarding causative factors. When data was inspected closely, many confounding variables were revealed which negated the conclusions drawn.

IX

Socioeconomic Factors and Achievement

The present and most recent study comes from work carried out in Uganda by Heyneman (1976). He examined the relationship between socio-economic (SE) environment and academic performance. Results seem to be consistent with research in other less industrialised countries. They suggest that the more industrialised society, the more school achievement is related to pupils socio-economic environment and other out-of-school influences. The analysis of three school variables indicated that their combined effect accounted for 3.18 per cent of the achievement variance in the Uganda sample. A comparison with the other studies carried out in many countries showed that school factors have slightly more influence in less industrialised countries.

X

Teacher Expectation and Achievement

The recent study by Williams (1976) proposes a model based on the notion that self-fulfilling prophesies within classrooms are important social phenomena for the inheritance of social inequalities. The model is designed to show how teacher prophesies transmit the effects of students' social origins to their

academic achievement, and includes;

(a) cognitive and normative dimensions of teacher expectation in a mutual influence relationship, and both

(b) standardised and teacher evaluations of achievement.

Results of estimating this model using data from 10,530 Canadian High School students indicate that teachers did not engage in social class discrimination. Teachers appeared to base their expectations on the achievement of students, not on students' ascribed characteristics.

Keisler, describes the concept of " actuarial prejudice " , a cognitive bias, based on available information about a group from the past and the present, that causes individuals to expect inferior performance from persons who belong to the group. The process, in part explains why both women and men expect relatively low achievement from women and while women are less likely to achieve than are men.

XI

Achievement and Birth Order and Family Size

Belmont, Stein & Wittes (1976) examined the effect of birth order on educational outcome in the Netherlands for two major social classes, manual and non manual. The rates of school failure(those who attended school for the mentally retarded and those who failed lower school) were studied in a population of approximately 200,000 young adult Dutch males born between 1944-1946, and whose families of crigin had from 1-6 children. The data used were the records of the Dutch Military Pre Induction Examination. Rates of school failure rose both with increased birth order and with the increased family size, with the exception of one-child families. School failure rates for the first, middle and last born were examined for the two social classes, with family size controlled. In general, school failure rates were significantly related to birth order position. For each family size and in both social classes, the last born were at greater risk of school failure, than were the first-born.

B IDENTIFICATION AND DIAGNOSIS OF UNDERACHIEVEMENT

The major approaches to identification and diagnosis of underachievement is through observation, i.e., observation by teachers, or self-observation and test assessment.

I Identification and Diagnosis through Observation and Self Observation

Claes and Salame (1975) studied 32 overachieving and 33 underachieving Secondary School students, equated for I.Q. range. Self evaluation scores were then correlated with the subject school achievement. Underachievers were self critical, inconsistent in their answers, and had difficulty in accurate self evaluation, indicating a low interiorization of high standards of performance in the tasks required. It also showed the relative lack of motivation observed in underachievers.

White and Simmons (1974) studied 1st grade readiness and how teachers could predict this through observing students' maturity. The teacher's perception of academic maturity as measured by a behavioural maturity scale, was a significant predictor of eventual achievement.

Stott, Sharp and Williams (1976) examined whether a general motivation towards effectiveness or competence could be observed in the free activity of pre-school children. The D. H. Stott and J. D. Sharp (1975) Effectiveness Motivation Scale was used by teachers in choosing descriptions of behaviour in eleven areas of activity which did not primarily gratify an organic or social need. Scores for 126, 4 year old pre-schoolers, in all eleven areas correlated positively with the scores for the remaining ten areas, giving mean correlations of .61 for males and .67 for females and .64 for both sexes together. These results were held to confirm the existence of a general factor of effectiveness motivation in the free activity of children of this age.

Stevenson, Et.al (1976) assessed / the relation of teachers' ratings of young children's abilities in classroom skills and personal social characteristics to achievement (Wide Range Achievement Test) in school. Teachers' ratings of 217 children were obtained in the Autumn and Spring of kindergarten and again in 2nd and 3rd grades. By the end of the 3rd grade, 146 children remained in the sample. A total of 63 teachers participated. Predictive validity of the ratings was high for both concurrent and subsequent achievement by the children. The sum of four ratings (effective learning, retaining information, vocabulary, and following instructions) predicted achievement nearly as well as the entire battery of the ratings. Average ratings were consistently higher for girls than for boys. Ratings made by mothers were less predictable of scholastic success than ratings made by teachers.

II

Measuring Diagnosis and Identification of Underachievement Through Tests

While the identification of underachievement is possible through observation and through the intuitive approach and of course, the tremendous experience of many teachers, diagnosis of the problem, must often be left to testing. Testing is therefore concentrated on assessing the reasons for underachievement, for the purpose of seeking remedial action. Senf and Comrey (1975) describe "SCREEN" (The Senf/Comrey Ratings of Extra Educational Need) an assessment procedure designed to: (a) identify children with a high risk for encountering academic and adjustment problems in school, (b) provide teachers with a broader basis for making educational decisions about each pupil, and (c) provide information which would both currently predict school problems and provide a focus for diagnostic follow-up. The inventory consists of four 15-minute child test modules and a teacher rating of pupil behaviour scale. Each module contains five sub-tests; a self-concept and school adjustment index, visual skills, auditory skills, figure-copying, and basic knowledge.

Newcomer (1975) reviewed the use of the Illinois test of psycholinguistic abilities test (ITPA). It was found, that for the most part, its sub-tests do not correlate significantly with academic achievement and none of the visual auditory sub-tests have any practical predictive or diagnostic value for educational use. At best, only grammatical closure, auditory association, and sound blending have some practical utility; of these only grammatical closure is consistently related to academic indices; even with this sub-test, however, the relationship is considerably reduced when intelligence is held constant, and the effects of other important variables, such as social class, are still largely undetermined.

The two peices of research that follow, are contradictory. One favours the use of the Wechsler Intelligence Test for Children, while the other sees some of the flaws associated with it, especially with minorities.
Goldman and Hartig (1976) tested the validity of the WISC for predicting several criterial teachers' ratings for primary grade children; 320 Black, 430 Anglo-American and 201 Mexican-American. Validities for the combined group, were good, but validities for the separate groups, differed markedly. Validities were good for the Anglo-Americans, but near zero for Blacks and Mexican-Americans. These results suggest that the WISC may be of little value in the assessment of the educability of minority children. The implication for educational placement and the heredity/environment controversy are discussed.

An article which contradicts this peice of research is that of Hartlage, Lucas and Godwin (1976). These researchers tested (100) 66 Black, 56 Male culturally disadvantaged 10-year old children on culture-fair (Raven's Progressive Matrices)and culturally biased (WISC) Intelligence Tests and examined the

correlations between these scores and academic achievement (wide range achievement test). WISC full-scale and verbal I.Q's both correlated better with academic achievement than RAVEN'S Progressive Matrices. Even with culturally disadvantaged children, it appears that the culture-fair test is not a better predictor of school success than a more culturally biased measure, perhaps because the criterion variable of school success is of itself heavily culturally biased.

Stevenson (1976) points to the advantage of using cognitive tests, rather than teachers' rating to both identify and predict children who are likely to underachieve. Stevenson, Et.al (1976) assessed the effectiveness of a battery of commonly used cognitives and psychometric tasks in predicting achievement in Reading and Arithmetic, in grades 1-3. Tasks were administered to 255 children (mean age, 5.4 years) prior to kindergarten. Teachers' ratings were obtained in kindergarten. Combinations of four tasks yielded optimal predictions of achievement. More effective predictions could be made from pre-kindergarten tasks than from teachers' rating. After Grade 1, the most effective prediction was derived from scores on prior tests of achievement. Relations among various tests of achievement, both within and across years and the relation of achievement scores to age, I.Q. and parental education were determined. Predictive tasks and teachers' ratings were used to select children who later had difficulty in school.

Another interesting approach to predicting achievement is via perceptual tests. Chissom, Thomas and Collins (1974) administered to 39 kindergarten children, four perceptual motor tests and two academic measures in order to assess the relationship among the perceptual motor tests and between the perceptual motor and academic tests. The Shape O ball test and the Frostig Developmental Test of visual perception were highly correlated and were good predictors of the academic measures. The Dynamic Balance task (Stabilometer) correlated moderately with the Shape O ball Test, the Frostig and the academic criteria. The Oseretsky Test of Motor Proficiency did not correlate significantly with any of the other measures. Stepwise multiple correlation indicated that combining the perceptual/motor tests slightly increased their ability to predict each of the academic criteria.

A final approach to diagnosing or predicting achievement is through tests of vigilance as practiced by Kirchner and Knopf (1974). They studied 32 male and 32 female middle to upper-middle class, White second graders and these were divided into high and low achievers (according to extreme scores on the Stanford Achievement Test) and were given a visual vigilance task. The vigilance task consisted of a 30-minute cinema of a stationary jet-plane. Subjects responded to a chance in a star on the plane's fuselage, which occurred a total of 24 times at predetermined intervals of 30, 60, 90 and 120 seconds. High achievers made significantly more correct detections and significantly fewer false responses.

C THE TREATMENT OF UNDERACHIEVEMENT

The main treatment approaches to underachievement may be divided into the following major categories and the research which follows exemplifies this approach:

(1) Developing interest in motivation and simultaneously eliminating or decreasing negative and disruptive demeanour.
(2) Using drugs.
(3) Teachers' attitudes leading to remedies.
(4) Behavioural approaches including teacher discipline, developing greater concentration, behaviour modification, etc..
(5) Utilising parent power to help children.
(6) Feeding back information to the underachiever, of achievements.
(7) Specific teachers' methods for developing higher achievement.

I

Developing Interest and Motivation and Negating Negative or Disruptive Behaviour

Harter, (1975) tested the relative strength of mastery motivation and need for approval in 40, 4 year old and 40, 10 year old upper-middle class children. Mastery motivation was to find as the desire to solve problems for the sake of discovering the solution, and need for approval was inferred from responsiveness to social reinforcement. Mastery motivation was the major determinant for older subjects, particularly males. Need for approval was important for females, but not for males. Contrary to prediction, approval was not the major determinant for younger subjects. They exhibited a form of mastery motivation which involved the repeated production of interesting stimulus events, rather than a concern for correctness.

Another study which sought to show how reinforcing academic achievement simultaneously lead to an improvement of the disruptive behaviour. Libb, Sachs and Boyd, (1973) monitored both academic and disruptive behaviour in a classroom for children with behavioural problems under two different token reinforcement procedures. Subjects were 6, 9-13 year old boys. Behavioural control was demonstrated when subjects were reinforced VI schedules for "in-seat" behaviour and also when they were reinforced for correct performance on daily tests. Academic performance was enhanced in the latter, but not the former condition, suggesting that control of classroom behavioural problems may be more efficiently achieved by reinforcing academic behaviour incompatible with disruptive behaviour.

Ryals, (1975) concentrated on developing higher achievement motivation in low-achieving 10th grade boys. 24 teachers participated in a 4-5 day achievement motivation training course and then trained 136, 8th and 10th graders during four weekends during the Autumn school term. Student training was conducted in two settings. Half of the students were trained in a local camp, and the remaining students were trained in their local school. Evaluation of the trained students' grades in Mathematics, English and Social Studies over the school year, showed that trained students performed significantly better in Mathematics than a randomly selected control group of students. Evaluation of pre and post training standardised test(Stanford Achievement Test) scores in Science and Social Studies showed that the trained students performed significantly higher on the Science tests than did control students.

Dinneen, (1975) worked with 21 High School students selected as reluctant learners in a two-week programme to relate assets and deficits to work, establish relationships to educational needs, and make subjects more aware of their interests and abilities. During the treatment, average self-concept scores moved in a positive direction on all seven factors in the Miskimins Self/Goal Other Discrepancy Scale, but the change was statistically significant on only two factors. 73 percent of the subjects had improved, and on a follow-up, four months later, 66 percent were found still improved.

II

Drug Therapy - The Treatment of Underachievement

Early experimentation with drugs gave some positive indications of the value of drugs in dealing with underachieving children. More recent research has shown drugs to have no affect on learning or dealing with the problems of underachieving children. Rie, Rie, Stewart and Ambuel, (1976) studied the effects of methylphenidate(Ritalin) on scholastic achievement of 14 male and 4 female 6-10 year old academically deficient children to validate findings of an earlier study by the present author (1976) which found no drug effect on scholastic achievement. Measures included the WISC, Iowa Tests of Basic Skills, Illinois Test of Psycholinguistic Abilities, TAT, and Bender/Gestalt Test. Results in keeping with the previous research indicate that while Ritalin affects behaviour, it does not enhance learning, and may in fact mask academic problems. The authors urge that the drug be used sparingly and critically, and only in conjunction with other modes of intervention.

A further study by the same authors, (Rie, Rie, Stewart and Ambuel, 1976) compares the reactions of 28, 6-9 year old underachieving children to active drug and placebo treatments. Mean drug dosage was 21.07mg./day. In a double-lined, counter-balanced design, each treatment condition was maintained for

twelve weeks. Using multiple medical and psychological measures (e.g.,TAT., WISC., and Bender/Gestalt), as well as a full-length standardised achievement test (Iowa Test of Basic Skills) and behaviour ratings, the typical suppressive behavioural affects were observed. No substantial drug effects on achievement were found, and pre-treatment evaluation failed to support the common assumption of concomitance among hyper-activity, minimal brain dysfunction and learning disorder. Reduced responsivity on active drug treatment was observed clinically. It is urged that effects of methylphenidate hydrochloride (Ritalin) on specific functions be considered rather than global effects without specification and it is concluded that Ritalin should not be used to treat "learning disorders".

III

Training Teachers' attitudes in order to Improve Achievement

Only one study will be sited to illustrate this particular approach to dealing with children who are underachieving. Johnson, Johnson, Johnson and Anderson (1976) compared the effects of structuring classroom learning co-operatively and individually on student ability to take the effective perspective of others altruism attitudes towards classroom life and achievement. 30 White working-class 5th graders matched on previous achievement in language arts were assigned to co-operative and individualised conditions for learning language arts for 45-60 minutes per day for seventeen days. Results indicate that co-operative, compared to individualised,learning resulted in great ability to take the affective perspective of others,more altruism, more positive attitudes towards classroom life and higher achievement.

IV

Behavioural Approaches including Behaviour Modification in the Treatment of Underachievement

There have been numerous studies in the use of behaviour modification and applied methods for dealing with children who are underachieving. Glavin (1974) attempted to determine whether the academic and behavioural gains made by 208, 2nd-6th grade graders, after one or two years of part-time placement in a behaviourally oriented resource room would be maintained following a full-time attendance in a regular class for two or three years. Subjects had participated in an earlier study. The results indicate no significant difference between experimental control groups after return to full-time regular classes for a two to three year interval.

A more optimistic result was that of Walker and Hops (1976). They compare the effects of three intervention procedures increasing academic achievement and levels of appropriate behaviour for children with relatively low rates of appropriate behaviour. Three groups of 16 subjects were selected in pairs from regular primary grade classrooms and one child from each group was randomly assigned to the experimental group. Experimental subjects received treatment in an experimental class setting, while control subjects remained in the regular classrooms. Group 1 subjects were reinforced for behaviour facilitative of academic performance, Group 2 for correct academic performance, and Group 3 for both. No significant treatment differences were found. However, there was a significant experimental/control group difference, favouring experimentals for Reading achievement, Mathematics achievement and level of appropriate behaviour.

An even more sophisticated approach using token reinforcement with retardeds was practiced by Ayllon, Garber and Pisor (1976). A common assumption in special education is that temporal limits for a task should be expanded so that ample time is provided for completing the work. The present study describes the opposite strategy of restricting temporal limits to augment academic performance. Three educable retarded 10-12 year olds (I.Q.,71-79) received token reinforcement contingent on the number of correct Maths. problems answered during daily sessions. A reversal/design was used to assess the effects of an abrupt reduction in time limits, (20/5/20 minutes) and a graduated sequence of reduction (20-15-10-5-20 minutes). The graduated sequence resulted in rate increases of correct responding, ranging from 125 per cent to 266 per cent and these gains endured when temporal limits were again expanded. In contrast, the abrupt shift produced interfering emotional behaviours and rate decreases in academic performance of 25 per cent to 80 per cent. Findings indicate that systematically restricting temporal limits for an academic task,can further enhance the performance of slow learners already maintained by a token system.

Finally, the work of Giles (1977), a Professor of Education and Child Study, carrying out research in Britain, of West Indian parents and English teachers, found that West Indian parents in Britain were much less tolerant of bad behaviour than English parents. With few exceptions, West Indian parents wanted more discipline in schools, but English teachers were often afraid to reprimand West Indian children for fear of being called "racists". Raymond claims that in British Schools there is no deterrent for West Indian children who are then confused by English teachers who said "No, don't do that." while at the same time smiling. The researcher recommended special training courses for teachers in multi-racial schools.

A final illustration of behaviour changes and its effect on achievement is that of Haubrich and Shores (1976). They investigated the relationship between attending behaviour, controlled by using study cubicles and academic performance, controlled by contingent reinforcement procedures, in 5 emotionally

disturbed children of upper elementary school age in a residential treatment centre. Results suggest that both cubicle and reinforcement conditions controlled attending behaviour. The reinforcement condition produced higher rates of attending and also increased academic performance, which the cubicle condition did not.

V

Using Parent Power to Combat Underachievement

Parent power has recently come into the fore-front and this previously unused source of help was studied by numerous investigators, but it is the behaviour modification group that has recently stressed this approach. Anderson and Evans (1976) examined variations in family socialisation practices among Anglo and Mexican-Americans and the effect of these practices on achievement values, self-concept and educational achievement. Data were collected from 69 Mexican and 33 Anglo-American Junior High School students and their families.

Mexican-American subjects apparently experienced much less independence training and were granted little autonomy in decision-making; they had little confidence in their ability to succeed at school and were somewhat fatalistic about their future, despite the high level of achievement training to which they were exposed in the home. Results suggest that direct attempts to encourage greater academic effort on the part of the students may have actually inhibited academic performance. In contrast, parental independence training resulted in significant gains in achievement among both groups by increasing the student's confidence, in coping with his or her physical and social environment. Such training may be critical among Mexican-American students if they are to perform well in classrooms which require that they work largely on their own initiative.

VI

Immediate Feed-back and its Effect on Achievement

It would seem commonsense that feed-back of information, and especially success attained by underachieving children, is vital in perpetuating success in school. And yet, this particular approach is rarely studied. One of the few investigators of this, Gagne,(1974) found that the effect of immediate feed-back improved the level of aspiration through statements made on learning tasks of socially maladjusted young people.

VII

The Importance of Challenging the Ability of Children who are Underachieving

This was studied by Nygard (1975). He reconsidered the achievement/moderation theory which assumed that moderate stimulation releases positive affects and low or high stimulation, negative affects. The most stimulating situation appears to be when the probability of success is .50; the least stimulating, when it is near 1 or 0. The motive to achieve success and avoid failure are moderators of the stimulation provided by a given situation. The motive to achieve success and individuals dominated by this, should experience positive affect where the probability of success is .50. It should therefore engage in such situations.

VIII

The Counselling Approach to Underachievement

Richards, Perri and Gortney (1976) in many counselling study follow-up data, indicate that clients have abandoned treatment procedures and their initial progresshas deteriorated. The present experiment explored two procedures for enhancing treatment maintenance: fading counselor contact and increasing information feed-back. 95 volunteer college students concerned about academic underachievement, participated. A biblio counseling system was employed, involving four behavioural self-control groups, a study skills advice group and a no-treatment control group. The design also included a no-contact control group of 21 non volunteers. Grade and questionnaire results showed faded contact was superior to steady contact for enhancing treatment maintenance. Increasing information feed-back about treatment effectiveness, did not affect maintenance. Self control and study skills advice group were superior to control groups. Results suggest that counsellors should consider fading their contact with clients.

IX

Using Perceptual Training to Improve Achievement

The question of perceptual training in helping children who are underachieving and suffering additionally from minimal brain damage, or other sensory defects, has been given a great deal of exploration in recent years, but the result is still somewhat inconclusive. One piece of research by Johnson and Valentino (1975) indicates there is some indication of improvement through perceptual training with 4th grade school performers, as illustrated by a case study of a 9½-year old girl who suffered from visual learning problems.

There are a great number of other studies involving perceptual training approaches, but not many dealing with underachievement in the academic sense generally.

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